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cont.  
one of the two members contacting the first substrate and the other of the two members contacting the second substrate and the two members contacting each other at a point intermediate between the first and second substrates,

wherein arranged densities of said gap controlling spacers are not uniform.

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### REMARKS

Claims 1-14 are pending in this application and have been rejected. Claims 1, 5, 8, 10, 12, and 13 have been amended.

The Examiner's reconsideration of the claim rejections is respectfully requested in view of the amendments and remarks.

### Drawing Objection

Figure 13 has been amended in accordance with Examiner's recommendation. Withdrawal of the drawing objection is respectfully requested.

### Claim Rejections Under 35 U.S.C. § 112

Claim 8 was rejected under 35 U.S.C. § 112 for the reasons set forth on page 2 of the Office Action.

Applicants have amended claim 8 to recite *the movable electrode plate*. The antecedent basis for this language appears in base claim 5. Accordingly, claim 8 is believed to satisfy the requirements of 35 U.S.C. § 112. Therefore, withdrawal of the 35 U.S.C. § 112 rejection is respectfully requested.

**Claim Rejections Under 35 U.S.C. § 102**

Claims 1, 2 and 10-12 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,852,487 to Fujimori ("Fujimori") for the reasons set forth on pages 2-3 of the Office Action.

Applicants have amended claims 1, 10, and 12 to recite *each . . . spacer(s) being formed by two members with one of the two members contacting the first substrate and the other of the two members contacting the second substrate and the two members contacting each other at a point intermediate between the first and second substrates.*

Support for the amendment can be found in the specification at page 36, line 8 - page 37, line 4.

Examiner has relied on Figure 1 of Fujimori as disclosing gap controlling spacers 11. It is respectfully submitted that Examiner has mistakenly referenced the polymer projection 11 as the spherical spacers 14 and referred to the spherical spacers 14 as a grid (Fig. 1; col. 8, lines 23-25). However, even if, *assuming arguendo*, the polymer projection 11 is construed to be a gap controlling spacer, Fujimori only discloses forming a polymer projection (spacer) extending between the alignment layers provided on the first and second substrates (col. 9, lines 22-24). Fujimori does not teach or suggest having a portion of a gap controlling spacer formed on a first substrate and another portion of the spacer formed on a second substrate, the portions being opposite to each other, as essentially claimed in claims 1, 10, and 12.

Having a gap controlling spacer that is not formed in a conventional manner advantageously avoids the problem of image characteristic deterioration when a liquid

crystal display is used in combination with a touch sensor (Specification page 16, lines 15-20). Additionally, even if load is applied in the planar direction only contact surfaces of the spacers 19a and 19b are rubbed by each other. Accordingly, any damage can be prevented from being given to the array and color filter substrates 14 and 13 (Specification page 36, line 21 - page 37, line 4).

Therefore, since Fujimori does not teach or suggest all of the claimed elements of claims 1, 10, and 12, Fujimori is legally deficient to sustain a rejection of claims 1, 10, and 12 under 35 U.S.C. § 102(b). Therefore, claims 1, 10, and 12 are believed to be patentable over Fujimori.

Furthermore since claim 11 depends from claim 10, and thus includes all of the claim limitations of claim 10, claim 11 is believed to be patentable at least for the reasons given for base claim 10. Therefore, the withdrawal of all of the 35 U.S.C. § 102(b) claim rejections is respectfully requested.

Claims 13 and 14 were rejected under 35 U.S.C. § 102(a) as being anticipated by Japanese Patent No. JP 2000-227596 to Yanawana ("Yanawana") for the reasons set forth on pages 3-4 of the Office Action.

Applicants have amended claim 13 to recite *each of the spacers being formed by two members with one of the two members contacting the first substrate and the other of the two members contacting the second substrate and the two members contacting each other at a point intermediate between the first and second substrates.*

Examiner states that Figs. 11B and 12 of Yanawana disclose gap controlling spacers 10. While Yanawana does disclose spacers 10, the spacers in Yanawana are formed and fixed entirely on the substrate (par. 0152). Yanawana does not teach or

suggest spacers having portions formed on different substrates arranged oppositely to each other, as essentially claimed in claim 13.

Since Yanawana does not teach or suggest all of the claimed elements of claim 13, Yanawana is legally deficient to sustain a rejection of claim 13 under 35 U.S.C. § 102(b). Therefore, claim 13 is believed to be patentable over Yanawana.

Furthermore since claim 14 depends from claim 13, and thus includes all of the claim limitations of claim 13, claim 14 is believed to be patentable at least for the reasons given for base claim 13. Therefore, the withdrawal of all of the 35 U.S.C. § 102(a) claim rejections is respectfully requested.

#### **Claim Rejections Under 35 U.S.C. § 103**

Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujimori in view of U.S. Patent No. 6,331,881 B1 to Hatano ("Hatano") for the reasons set forth on page 4 of the Office Action.

The rejection of claim 3 is based in part on Fujimori disclosing all of the features of base claim 1 from which claim 3 depends. As was demonstrated above, Fujimori does not teach or suggest *each of the spacers being formed by two members with one of the two members contacting the first substrate and the other of the two members contacting the second substrate and the two members contacting each other at a point intermediate between the first and second substrates.*, as claimed in claim 1.

Furthermore, while Hatano discloses a liquid crystal device with composite layer of cured resin pillars, Hatano does not teach or suggest the aforementioned claimed feature.

Therefore, since claim 3 depends from claim 1, and thus includes all of the

limitations of claim 1, claim 3 is believed to be patentable, since the combination of Fujimori and Hatano does not teach or suggest all of the claimed elements of base claim 1 from which claim 3 depends.

Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujimori in view of Yanawana for the reasons set forth on page 5 of the Office Action.

Claim 4 depends from claim 1. As was demonstrated above, neither Fujimori nor Yanawana teach or suggest the claim 1 feature of *each of the spacers being formed by two members with one of the two members contacting the first substrate and the other of the two members contacting the second substrate and the two members contacting each other at a point intermediate between the first and second substrates.*

Thus, a rejection of claim 1 cannot legally be sustained under 35 U.S.C. § 103(a), since all of the claimed features are not disclosed in the cited combination of references. Therefore, since claim 4 depends from claim 1, and thus includes all of the limitations of claim 1, claim 4 is believed to be patentable at least for the reasons given for claim 1.

Claims 5-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujimori for the reasons set forth on pages 5-6 of the Office Action.

Applicants have amended claim 5 to recite of *each spacer being formed by two members with one of the two members contacting the first substrate and the other of the two members contacting the second substrate and the two members contacting each other at a point intermediate between the first and second substrates.*

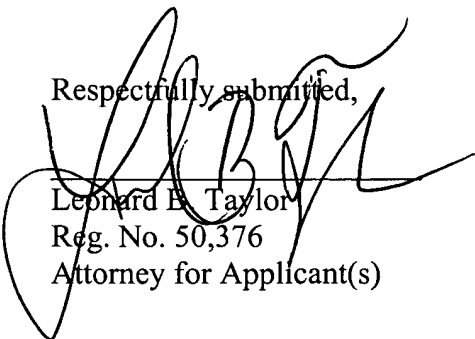
The same arguments put forth for claims 1, 10, and 12 equally apply to claim 5. Fujimori does not teach or suggest all of the claimed features of claim 5, and thus is legally deficient to support a rejection of claim 5 under 35 U.S.C. § 103(a). Therefore,

claim 5 is believed to be patentable and non-obvious over Fujimori.

Additionally, since claims 6-9 depend from claim 5, and thus include all of the limitations of claim 5, claims 6-9 are believed to be patentable at least for the reasons given for base claim 5. Therefore, the withdrawal of all of the 35 U.S.C. § 103(a) claim rejections is respectfully requested.

Early and favorable consideration of this application is requested.

Respectfully submitted,



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### **Marked-Up Version Illustrating Claim Amendments**

Please amend the claims as follows:

1. (Amended) A touch sensor type liquid crystal display comprising:  
a liquid crystal display panel having first and second substrates arranged oppositely to each other by a specified gap;  
gap controlling spacers, each of which restricts a width of the gap and a spacer movement in a planar direction, each of the spacers being formed by two members with one of the two members contacting the first substrate and the other of the two members contacting the second substrate and the two members contacting each other at a point intermediate between the first and second substrates; and  
a touch sensor added to the liquid crystal display panel including fixed and movable electrode plates.

5. (Amended) A touch sensor type liquid crystal display comprising:  
a liquid crystal display panel having array and color filter substrates arranged oppositely to each other by a specified gap;  
a gap controlling spacer for restricting a width of the gap and a spacer movement in a planar direction, each spacer being formed by two members with one of the two members contacting the array substrate and the other of the two members contacting the color filter substrate and the two members contacting each other at a point intermediate between the array and color filter substrates; and  
a touch sensor added to the liquid crystal display panel including fixed and movable electrode plates; and

a grid arranged between the fixed and movable electrode plates,  
wherein arranging positions of said gap controlling spacer and said grid are  
coincident with each other.

8. (Amended) The touch sensor type liquid crystal display according to claim 5,  
wherein said array and color filter substrates of the liquid crystal display panel are  
arranged oppositely to each other by interpolating a liquid crystal layer, said movable  
electrode plate serves as a touch sensor arranged oppositely to the color filter substrate by  
a specified gap, and a conductive film is provided to serve as a touch sensor formed on a  
surface opposite the movable electrode plate [of the color filter substrate].

10. (Amended) A touch sensor type liquid crystal display comprising:  
a liquid crystal display panel having first and second substrates arranged  
oppositely to each other by a specified gap;  
a gap controlling spacer formed in a columnar shape for restricting a width of the  
gap, each spacer being formed by two members with one of the two members contacting  
the first substrate and the other of the two members contacting the second substrate and  
the two members contacting each other at a point intermediate between the first and  
second substrates; and  
a touch sensor added to the liquid crystal display panel including movable and  
fixed electrode plates.

12. (Amended) A touch sensor type liquid crystal display comprising:



a liquid crystal display panel having first and second substrates arranged oppositely to each other by a specified gap;

a touch sensor added to the liquid crystal display panel including movable and fixed electrode plates; and

a gap controlling spacer for restricting a width of the gap, each spacer being formed by two members with one of the two members contacting the first substrate and the other of the two members contacting the second substrate and the two members contacting each other at a point intermediate between the first and second substrates,

wherein said gap controlling spacer is brought into surface-contact with one selected from the first and second substrates, the gap therebetween being restricted by the gap controlling spacer.

13. (Amended) A liquid crystal display comprising:

a liquid crystal display panel having first and second substrates arranged oppositely to each other by a specified gap; and

gap controlling spacers, each of which restricts a width of the gap and a spacer movement in a planar direction, each of the spacers being formed by two members with one of the two members contacting the first substrate and the other of the two members contacting the second substrate and the two members contacting each other at a point intermediate between the first and second substrates,

wherein arranged densities of said gap controlling spacers are not uniform.